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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/025,906	12/26/2001	Jong Jin Park	8733.527.00	7495

30827 7590 01/05/2004

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EXAMINER	
DEWITTE, CONRAD J	

ART UNIT	PAPER NUMBER
2673	4

DATE MAILED: 01/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/025,906	PARK ET AL.	
	Examiner	Art Unit	
	Conrad J. DeWitte	2673	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 December 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-19* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-19* is/are rejected.

7)☒ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 December 2001* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

13)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

a) ☐ The translation of the foreign language provisional application has been received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: .

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference signs not mentioned in the description: 40, 42 in Figs. 9 & 10. A proposed drawing correction, corrected drawings, or amendment to the specification to add the reference signs in the description, are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the first paragraph of 35 U.S.C. § 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claims 8-11 and 15-18 are rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. The claims contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention.

4. Applicants' explanation of the function of the "second shift register" discussed in the specification and in claims 8-10 and 15-18 is unclear to the Examiner. *See* Specification, ¶¶ 0027, 0046, 0049, 0050, 0056. Specifically, the Examiner does not understand whether the second shift register is being used to shift a bit 'i' in the second shift register to a bit 'i+1' in the second shift register, or instead if the second shift register is being used to shift a bit 'i' from the second shift register to a bit 'i+1' located in the first shift register (where the first shift register and the second shift register have the same number of bits, 1 to n).

5. It is the Examiner's position that if the Applicants mean the latter, then their invention merely uses the second shift register as a buffer for individual bits. Thus, the buffer reads the 'i' but from the first shift register, holds this 'i' bit for a period of time, and then writes this 'i' bit to the first shift register's 'i+1' bit. In this case, the Examiner suggests replacing "second shift register" in the specification, claims, and drawings with a generic buffer, which does not have any shifting capability.

6. The Examiner recognizes Applicants' ability to be their own lexicographer, however, if Applicants' do not specifically redefine their terms in the specification, the terms are given their ordinary meaning. *See Process Control Corp. v. HydReclaim Corp.*, 190 F.3d 1350, 1357, 52 USPQ2d 1029, 1033 (Fed. Cir. 1999) (holding that where applicant acts as his or her own lexicographer to specifically define a term of a claim contrary to its ordinary meaning, the written description must clearly redefine the claim term and set forth the uncommon definition so as to put one reasonably skilled in the art on notice that the applicant intended to so redefine that claim term). Thus, the Examiner expects that a "second shift register" would be used to shift a bit 'i' in the second shift register to a bit 'i+1' also in the second shift register. If Applicants' invention does use a "second shift register" and not a buffer, the Examiner requires this to be clarified in the specification by clearly explaining how the second shift register is used in the invention. Without this additional explanation and information, one of ordinary skill in the art would be forced to engage in undue experimentation to make the claimed invention.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 1, 2, 5, 6, 12, 13 and 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Kwon, U.S. Pat. No. 6,525,710 B1.

9. Regarding claim 1, Kwon discloses a method of driving a liquid crystal display, comprising the steps of: supplying a first scanning signal to a first gate line positioned at a specific location among a plurality of gate lines for driving a liquid crystal cell (col. 1, line 63-col. 2, line 3; Fig. 4, element G1); supplying a second scanning signal to a second gate line which is formed while having at least one gate line between said first gate line and said second gate line after said first gate line scanning signal has been supplied (Fig. 4, element G3); and supplying data synchronized with said first scanning signal and said second scanning signal to a plurality of data lines formed in the manner of crossing with the plurality of said gate lines (col. 1, line 65-col. 2, line 3).

10. Regarding claim 2, Kwon further discloses that said first scanning signal and said second scanning signal are sequentially supplied to the plurality of said gate lines. Col. 1, line 65; Fig. 4, elements G1-Gn.

11. Regarding claim 5, Kwon discloses a liquid crystal display, comprising a liquid crystal display panel where a plurality of liquid crystal cells are arranged in a matrix type (Fig. 2,

element 21); a plurality of gate lines formed in said liquid crystal panel (Fig. 3, elements G1-Gn); a plurality of data lines formed in a manner of crossing with the plurality of said gate lines (Fig. 3, elements D1-Dn); a gate driver for supplying a first scanning signal and a second scanning signal to the plurality of said gate lines (Fig. 2, element 22); a scanning signal supplier for supplying said first scanning signal and said second scanning signal to said gate driver (col. 2, lines 30-40; Fig. 6B, element VSYNC); and a data driver for supplying to the plurality of said data lines the data synchronized with said first scanning signal and said second scanning signal (col. 2, line 4-30; col. 1, lines 39-47; Fig. 5A, element HSYNC).

12. Regarding claim 6, Kwon further discloses said first scanning signal and said second scanning signal are alternately and sequentially supplied. Fig. 6B, element VSYNC.

13. Regarding claim 12, Kwon discloses a method of driving a liquid crystal display, comprising the steps of providing a liquid crystal display panel having a plurality of liquid crystal cells arranged in a matrix (Fig. 2, element 21); forming a plurality of gate lines in said liquid crystal panel (Fig. 3, elements G1-Gn); forming a plurality of data lines in a manner of crossing with said plurality of gate lines (Fig. 3, elements D1-Dn); providing a scanning signal supplier supplying first and second scanning signals to a gate driver Fig. 2, element 22), said gate driver supplying said first and second scanning signals to said gate lines (col., 12, lines 45-60; Fig. 7A, element VSYNC); and supplying data synchronized with said first and second scanning signals to the plurality of said data lines using a data driver (col. 2, lines 4-30; Fig. 5A, element HSYNC).

14. Regarding claim 13, Kwon further discloses alternately and sequentially supplying said first and second scanning signals. Fig. 6B, element VSYNC.

15. Regarding claim 19, Kwon discloses a method of driving a liquid crystal display, comprising the steps of supplying first and second scanning signals to a plurality of gate lines in a liquid crystal panel (Fig. 6B, elements G1-Gn) having a plurality of liquid crystal cells arranged in a matrix (Fig. 8A, elements G1-Gn, D1-Dn, 71, 73); and supplying data signals to a plurality of data lines, wherein the data signals are synchronized with the first and second scanning signals (col. 6, lines 29-52), and wherein the data lines intersect the gate lines (Fig. 8A, elements G1, D1).

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

17. Claims 3, 4, 7, and 14 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Kwon as applied to claims 1, and 5 above, and further in view of Inoue et al., U.S. Pat. No. 5,345,250 A.

18. Regarding claim 3, Kwon does not disclose supplying picture data to the plurality of said data lines in synchronization with said first scanning signal; and supplying black data to the plurality of said data lines in synchronization with said second scanning signal. However, Inoue et al. does disclose supplying picture data to the plurality of said data lines in synchronization with said first scanning signal (col. 7, lines 31-51); and supplying black data to the plurality of said data lines in synchronization with said second scanning signal (col. 29, line 25-col. 30, line 13). It would have been obvious to one of ordinary skill in the art at the time the invention was

made to combine the teachings of Inoue et al., and Kwon because Inoue et al. and Kwon disclose a methods of improving a large LCD display. Kwon, col.2, lines 49-55; Inoue et al., col. 3, line 62-col. 4, line 58. In particular, Inoue et al. explains the benefits of this "supplying," which includes "provid[ing] very little fluctuation in transmittance and . . . obivat[ing] difficulties, such as visual recognition of a writing scanning line . . . and occurrence of flickering under a frame frequency lower than 30 Hz."

19. Regarding claim 4, Kwon does not disclose supplying picture data to the plurality of said data lines in synchronization with said second scanning signal; and supplying black data to the plurality of said data lines in synchronization with said first scanning signal. However, Inoue et al. does disclose supplying picture data to the plurality of said data lines in synchronization with said second scanning signal (col. 7, lines 31-51); and supplying black data to the plurality of said data lines in synchronization with said first scanning signal (col. 29, line 25-col. 30, line 13).

20. Regarding claim 7, Kwon does not disclose that said data driver supplies black data to said data line when said first scanning signal is supplied to a first gate line; and picture data is supplied when said second scanning signal is supplied to a second gate line, at least one additional gate line between the second gate line and the first gate line. However, Inoue et al. does disclose that said data driver supplies black data to said data line when said first scanning signal is supplied to a first gate line (col. 29, line 36-col. 30, line 4); and picture data is supplied when said second scanning signal is supplied to a second gate line, at least one additional gate line between the second gate line and the first gate line (col. 29, lines 10-22 & 25-31).

21. Regarding claim 14, Kwon does not disclose using said data driver to supply a black data signal to said data line when said first scanning signal is supplied to one of said gate lines; and

using said data driver to supply a picture data signal when said second scanning signal is supplied to a selected gate line, wherein at least one gate line is provided between said selected gate line and said gate line to which said first scanning signal is supplied. However, Inoue et al. does disclose using said data driver to supply a black data signal to said data line when said first scanning signal is supplied to one of said gate lines (col. 29, line 36-col. 30, line 4); and using said data driver to supply a picture data signal when said second scanning signal is supplied to a selected gate line, wherein at least one gate line is provided between said selected gate line and said gate line to which said first scanning signal is supplied (col. 29, lines 10-22 & 25-31).

Allowable Subject Matter

22. Claims 8-11 and 15-18 would be allowable if rewritten to overcome the rejection under 35 U.S.C. § 112, first paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

23. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Ozawa, U.S. Pat. No. 6,559,433 B1 (disclosing a display type image sensor)
- Kurumisawa et al., U.S. Pat. No. 6,496,174 B2 (disclosing a method of driving a display device, a display device, and an electronic apparatus)
- Kurumisawa et al., U.S. Pat. No. 6,262,704 B1 (disclosing a method of driving a display device, a display device, and an electronic apparatus)

- Imamura, U.S. Pat. No. 6,232,949 B1 (disclosing a passive matrix LCD with drive circuits at both ends of the scan electrode applying equal amplitude voltage waveforms simultaneously to each end)
- Nakano et al., U.S. Pat. No. 6,229,513 B1 (disclosing a liquid crystal display apparatus having a display control unit for lowering the clock frequency at which pixel drivers are driven)
- Gyouten et al., U.S. Pat. No. 6,195,077 B1 (disclosing a device and method for driving a liquid crystal display apparatus)
- Hayashi, U.S. Pat. No. 6,104,364 A (disclosing a device for reducing output deviation in a liquid crystal display driving device)
- Hashimoto, U.S. Pat. No. 6,014,122 A (disclosing a liquid crystal driving circuit for driving a liquid crystal display panel)
- Kanatani et al., U.S. Pat. No. 5,412,397 A (disclosing a driving circuit for a matrix type display device)
- Fukuda, U.S. Pat. No. 5,162,786 A (disclosing a driving circuit of a liquid crystal display)
- Hosokawa et al., U.S. Pat. No. 4,429,305 A (disclosing a liquid crystal display system)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Conrad J. DeWitte whose telephone number is (703) 305-8626. The examiner can normally be reached on Monday through Friday, 8 a.m. to 4:30 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Mancuso can be reached on (703) 305-4938. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

CJD

JOSEPH MANCUSO
PRIMARY EXAMINER